

the Tertiary age, and that the center of distribution of woodland forms has been the forests of central Europe, while ruderal myrmecochorous forms have radiated from the Mediterranean region. The elaiosomes, in his opinion, have originated in many ways quite independently of the purpose they now serve as factors in distribution.—GEO. D. FULLER.

Anisophylly.—In *Strobilanthes anisophyllus* FIGDOR,²³ experimenting to discover the cause of the development of isophyllous shoots, is satisfied that it is a reversion to juvenile form because seedlings show no anisophylly until they have attained considerable size, and he thinks that it should be possible to prolong isophyllous development indefinitely. He agrees with BOSHART²⁴ that good nutrition tends to promote isophylly, but takes exception to his statement that anisophylly is to be explained through dorsiventrality. BOSHART²⁵ in a more recent paper lays emphasis on his former points, such as the asymmetry of the growing point of anisophyllous shoots and the very slight effect of gravity and light. He thinks that the latter factor may affect anisophylly through increasing or decreasing the vigor of the shoot, the weakening favoring asymmetry. He finds, on the contrary, light exercising a direct influence upon the anisophylly of certain species of *Selaginella* and *Lycopodium*.

Anisophyllous rosettes in various species of *Sempervivum* have been experimentally shown by DOPOSCHEG-UHLÁR²⁶ to result from an inclination of the stem axis toward the horizontal, but whether the response was effected by gravity or light he was unable to determine. The anisophylly seems to disappear toward the close of the growing season and to be renewed early the following spring. The phenomenon in nature is closely associated with the crowded grouping of young plants about the parent rosette in the characteristic multiplication by offshoots.—GEO. D. FULLER.

Morphology of Agathis.—EAMES²⁷ has investigated the Kauri, the famous timber tree of the Australasian region. Our knowledge of the morphology of the araucarians has lagged behind that of the other coniferous tribes, so that this contribution is very timely. An outline of the results is as follows. Pollination occurs a year after the appearance of the ovulate strobili, and fertiliza-

²³ FIGDOR, W., Das Anisophyllie-Phaenomen bei Vertretern des Genus *Strobilanthes* Blume. Ber. Deutsch. Bot. Gesells. 29:549-558. 1911.

²⁴ BOSHART, K., Beiträge zur Kenntnis der Blattasymmetrie und Exotrophie. Flora 103:91-124. 1911.

²⁵ BOSHART, K., Über die Frage der Anisophyllie. Ber. Deutsch. Bot. Gesells. 30:27-33. 1912.

²⁶ DOPOSCHEG-UHLÁR, J., Die Anisophyllie bei *Sempervivum*. Flora 105:162-183. 1913.

²⁷ EAMES, ARTHUR J., The morphology of *Agathis australis*. Ann. Botany 27:1-38. figs. 92. pls. 1-4. 1913.